

IN THE CLAIMS:

Please amend Claims 40 to 43 without prejudice or disclaimer of subject matter. Please amend Claim 1 as follows:

1. (Currently Amended) A method for managing a plurality of multifunction network devices on a network, each multifunction network device having a network interface for communication on the network, and each multifunction network device further having a plurality of hardware resources including a storage memory for storing a plurality of function modules which include ~~a function module~~ function modules for controlling ~~a printer and a function module for controlling a scanner~~ an image processing apparatus, a program memory for use by the function modules and a processor for executing each of the function modules, said method comprising the steps of:

detecting a reconfiguration event for one of the plurality of multifunction network devices;

sending a first reconfiguration command including a deletion command to delete at least one of software modules from an information processing apparatus on the network to one of the plurality of multifunction network devices corresponding to the reconfiguration event in case that the reconfiguration event is detected in the detecting step in response to the increase of demand for the hardware resources and sending a second reconfiguration command to retrieve a deleted software module by sending the deleted software module from the information processing apparatus to the multifunction network device via the network to one of the plurality of multifunction network devices

corresponding to the reconfiguration event in case that the reconfiguration event is detected in the detecting step in response to the decrease of the demand for the hardware resources from the software module;

first reconfiguring the multifunction network devices by deleting the software module in one of the plurality of multifunction network devices in accordance with the first reconfiguration command and sending the software module to the image processing apparatus via the network; and

second reconfiguring one of the plurality of multifunction network devices by retrieving the deleted software module in the first reconfiguring step from the information processing apparatus on the network in accordance with the second reconfiguration command.

~~————— sending via the network a reconfiguration command to the one multifunction network device in response to the detection of the event, the reconfiguration command being a deletion command to delete at least one of the function modules or a reallocation command to reallocate an amount of at least one of the hardware resources available for use by each of the plurality of function modules; and~~

~~————— receiving via the network a confirmation message confirming that the one multifunction network device has been reconfigured in accordance with the reconfiguration command, wherein the confirmation message is transmitted over the network by the one multifunction network device via its network interface.~~

2. (Original) A method according to Claim 1, wherein the reconfiguration event is a request for execution of one of the plurality of function modules by the one multifunction network device.

3. (Original) A method according to Claim 1, wherein the reconfiguration event is a trigger set by a configuration module executing in a computing device on the network.

4. (Original) A method according to Claim 3, wherein the trigger is set in response to a detection by the configuration module of an increased demand for use of the storage memory and of the program memory in the one multifunction network device.

5. (Original) A method according to Claim 4, wherein the detection by the configuration module of an increased demand for use of the storage memory and of the program memory is based on resource information data which is passed from the one multifunction network device to the configuration module.

6. (Original) A method according to Claim 5, wherein the resource information data includes a current utilized amount of the storage memory and a current utilized amount of the program memory of the one multifunction network device.

7. (Original) A method according to Claim 5, wherein the resource information data is passed in an SNMP message from the one multifunction network device to the configuration module.

8. (Original) A method according to Claim 3, wherein the trigger is set by the configuration module based on receipt of a request message by the configuration module from the one multifunction network device.

9. (Original) A method according to Claim 8, wherein the request message comprises a request by the one multifunction network device for an increased useable capacity of the storage memory and of the program memory in the one multifunction network device.

10. (Original) A method according to Claim 8, wherein the request message is passed in an SNMP message from the one multifunction network device to the configuration module.

11. (Original) A method according to Claim 3, wherein the configuration module monitors an overall demand for execution of each of the plurality of functions by the plurality of multifunction network devices, and wherein the trigger is set by the configuration module based on a detected increase in the overall demand for execution of one of the plurality of functions.

12. (Original) A method according to Claim 11, wherein the configuration module monitors the overall demand for execution of each of the plurality of functions by monitoring a plurality of function request messages which are sent to the plurality of multifunction network devices.

13. (Original) A method according to Claim 1, wherein the one multifunction network device is reconfigured in accordance with the reconfiguration command by deleting at least one of the function modules from the storage memory.

14. (Original) A method according to Claim 1, wherein the one multifunction network device is reconfigured in accordance with the reconfiguration command by deleting all of the function modules except one designated function module from the storage memory.

15. (Original) A method according to Claim 1, wherein the one multifunction network device is reconfigured in accordance with the reconfiguration command by reallocating a designated amount of the program memory for use by each of the function modules.

16. (Original) A method according to Claim 1, wherein the one multifunction network device is reconfigured in accordance with the reconfiguration command by instructing an operating system in the one multifunction network device to

respond only to a function request message which requests execution of a designated function module.

17. (Original) A method according to Claim 1, wherein in the sending step the reconfiguration command can further be selected from an addition command to add a designated function module to the storage memory and the program memory of the one multifunction network device.

18. (Original) A method according to Claim 17, wherein the reconfiguration event is a trigger set by a configuration module executing in a server on the network, and the trigger is based on a detection by the configuration module that the one multifunction device has a decreased demand for use of the storage memory and of the program memory.

19. (Original) A method according to Claim 18, wherein the detection by the configuration module of an decreased demand for use of the storage memory and of the program memory is based on resource information data which is passed from the one multifunction network device to the configuration module.

20. (Original) A method according to Claim 19, wherein the resource information data includes a current utilized amount of the storage memory and a current utilized amount of the program memory of the one multifunction network device.

21. (Original) A method according to Claim 19, wherein the resource information data is passed in an SNMP message from the one multifunction network device to the configuration module.

22. (Original) A method according to Claim 17, wherein the reconfiguration event is a trigger set by a configuration module executing in a server on the network, and the trigger is based on an expiration of a predetermined time duration which was initiated at a last reconfiguration event for the one multifunction device.

23. (Original) A method according to Claim 17, wherein the reconfiguration event is a trigger set by a configuration module executing in a server on the network, and the trigger is based on receipt of a request message by the configuration module from the one multifunction network device.

24. (Original) A method according to Claim 23, wherein the request message comprises a request by the one multifunction network device for the addition of at least one function module to the storage memory and to the program memory in the one multifunction network device.

25. (Original) A method according to Claim 17, wherein the reconfiguration event is a trigger set by a configuration module executing in a server on the

network, and the trigger is based on discovery by the configuration module of the one multifunction network device on the network.

26. (Original) A method according to Claim 25, wherein the one multifunction network device is discovered by detection of an SNMP announcement message sent over the network by the one multifunction network device.

27. (Original) A method according to Claim 17, wherein, in the case that the reconfiguration command is an addition command to add a designated function module to the storage memory and the program memory of the one multifunction network device, the designated function module is downloaded to the one multifunction network device.

28. (Original) A method according to Claim 27, wherein the designated function module is downloaded to the one multifunction network device from a component repository module in response to an instruction from a configuration module.

29. (Original) A method according to Claim 28, wherein the component repository module and the configuration module are executing on a same computing device on the network.



30. (Original) A method according to Claim 28, wherein the component repository module and the configuration module are executing on a separate respective computing devices on the network.

31. (Original) A method according to Claim 28, wherein the component repository module executes on a server on the network.

32. (Original) A method according to Claim 28, wherein a version identification of the designated function module is provided in the instruction from the configuration module to the component repository module.

33. (Original) A method according to Claim 32, wherein the version identification is determined in accordance with a preset profile corresponding to the one multifunction network device.

34. (Original) A method according to Claim 33, wherein the preset profile corresponding to the one multifunction network device contains information regarding allowed function modules that can be downloaded to the one multifunction network device and a version identification for each of the allowed function modules.

35. (Original) A method according to Claim 27, wherein the designated function module is downloaded to the one multifunction network device from a component repository module in response to an instruction from the one multifunction network device.

36. (Original) A method according to Claim 35, wherein a version identification of the designated function module is provided in the instruction from the one multifunction network device to the component repository module.

37. (Original) A method according to Claim 1, wherein the reconfiguration event is a trigger set by the one multifunction network device based on a determination by the one multifunction network device that there is a need for an increased useable capacity of the storage memory and of the program memory in the one multifunction network device.

38. (Original) A method according to Claim 37, wherein the reconfiguration command is sent internally within the one multifunction network device which is reconfigured in accordance with the reconfiguration command by deleting all of the function modules except one designated function module from the storage memory and from the program memory.

39. (Original) A method according to Claim 38, wherein the deleted function modules are sent from the one multifunction network device to a component

repository on the network, and wherein the deleted modules are subsequently retrieved by the one multifunction network device from the component repository and added to the storage memory and to the program memory.

40. to 43. (Cancelled)

44. (Previously Presented) A method according to Claim 1, wherein the one multifunction network device is reconfigured in accordance with the reconfiguration command by prohibiting the use of program memory for at least one of the function modules.

45. (Previously Presented) A method according to Claim 1, wherein the one multifunction network device is reconfigured in accordance with the reconfiguration command by prohibiting the use of program memory for all of the function modules except a designated function module.

46. to 52. (Cancelled)

Please add Claims 53 to 58, as follows:

53. (New) A method for controlling an information processing apparatus, the apparatus having a storage unit for storing a plurality of software modules and being

capable of communicating with a plurality of multifunctional network devices, said method comprising the steps of:

detecting a reconfiguration event from at least one of the plurality of multifunction network devices based on a status of use of hardware resources in a plurality of image processing functions of the plurality of software modules in each of the plurality of multifunctional network devices;

first sending a deletion command for instructing the deletion of the software module to the multifunctional network device which sends the reconfiguration event, in case that the reconfiguration event detected by the detecting step is the event indicating a need to delete a specific software module in the multifunctional network device detected in response to the increase of demand for the hardware resources; and

second sending a requested software module stored in the storage unit to the multifunctional network device which sends the event, in case that the reconfiguration event detected by the detecting step is the event indicating to request a specific software module detected in response to the decrease of demand for the hardware resources.

54. (New) A method for controlling a multifunctional network device, the device having a storage memory including a plurality of software modules, a program memory to be used by the software modules and a plurality of hardware resources for image processing functions including a processor performing the software module and being capable of communicating with a network, said method comprising the steps of:

determining whether the hardware resources need to be reallocated based on a status of use of the hardware resources by the plurality of software modules;

first reconfiguring by deleting at least one of the plurality of software modules and sending the software module deleted so as to secure the hardware resources in the multifunction network devices to an information processing apparatus on the network when the determining step determines that the hardware resources need to be reallocated; and

second reconfiguring the multifunction network devices by retrieving the deleted software module from the information processing apparatus on the network in response to a status of use of the hardware resources after the first reconfiguring step.

55. (New) An apparatus for controlling an information processing apparatus, having a storage unit for storing a plurality of software modules and being capable of communicating with a plurality of multifunctional network devices, comprising:

a detector which detects a reconfiguration event from at least one of the plurality of multifunction network devices based on a status of use of hardware resources in a plurality of image processing functions of the plurality of software modules in each of the plurality of multifunctional network devices;

instruction means for sending a deletion command for instructing the deletion of the software module to the multifunctional network device which sends the reconfiguration event, in case that the detected reconfiguration event detected is the event

indicating a need to delete a specific software module in the multifunctional network device detected in response to the increase of demand for the hardware resources; and

sending means for sending a requested software module stored in the storage unit to the multifunctional network device which sends the event, in case that the detected reconfiguration event is the event indicating to request a specific software module detected in response to the decrease of demand for the hardware resources.

56. (New) An apparatus for controlling a multifunctional network device, having a storage memory including a plurality of software modules, a program memory to be used by the software modules and a plurality of hardware resources for image processing functions including a processor performing the software module and being capable of communicating with a network, comprising:

determining means for determining whether the hardware resources need to be reallocated based on a status of use of the hardware resources by the plurality of software modules;

first reconfiguring means for deleting at least one of the plurality of software modules and sending the software module deleted so as to secure the hardware resources in the multifunction network devices to an information processing apparatus on the network when the determining means determines that the hardware resources need to be reallocated; and

second reconfiguring means for reconfiguring the multifunction network devices by retrieving the deleted software module from the information processing apparatus on the network in response to a status of use of the hardware resources.

57. (New) A computer-readable memory medium having computer-executable process steps stored thereon for controlling an information processing apparatus, the apparatus having a storage unit for storing a plurality of software modules and being capable of communicating with a plurality of multifunctional network devices, wherein said process steps comprise:

a detecting step to detect a reconfiguration event from at least one of the plurality of multifunction network devices based on a status of use of hardware resources in a plurality of image processing functions of the plurality of software modules in each of the plurality of multifunctional network devices;

a first sending step to send a deletion command for instructing the deletion of the software module to the multifunctional network device which sends the reconfiguration event, in case that the reconfiguration event detected by the detecting step is the event indicating a need to delete a specific software module in the multifunctional network device detected in response to the increase of demand for the hardware resources; and

a second sending step to send a requested software module stored in the storage unit to the multifunctional network device which sends the event, in case that the reconfiguration event detected by the detecting step is the event indicating to request a

specific software module detected in response to the decrease of demand for the hardware resources.

58. (New) A computer-readable memory medium having computer-executable process steps stored thereon for controlling a multifunctional network device, the device having a storage memory including a plurality of software modules, a program memory to be used by the software modules and a plurality of hardware resources for image processing functions including a processor performing the software module and being capable of communicating with a network, wherein said process steps comprise:

a determining step to determine whether the hardware resources need to be reallocated based on a status of use of the hardware resources by the plurality of software modules;

a first reconfiguring step to reconfigure by deleting at least one of the plurality of software modules and sending the software module deleted so as to secure the hardware resources in the multifunction network devices to an information processing apparatus on the network when the determining step determines that the hardware resources need to be reallocated; and

second reconfiguring step to reconfigure the multifunction network devices by retrieving the deleted software module from the information processing apparatus on the network in response to a status of use of the hardware resources after the first reconfiguring step.